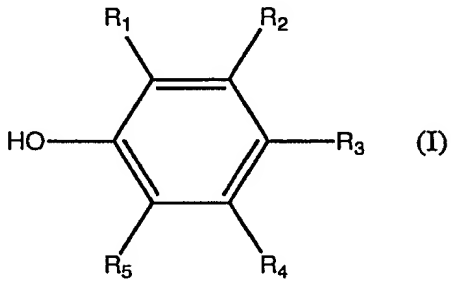
**Amendments to the Claims**:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

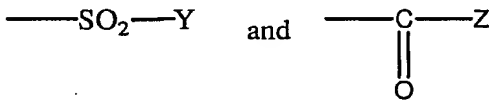
1–34. (Canceled)

35. (New) A molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds prepared by the method of reacting a phenol derivative represented by Formula (I):




(I)

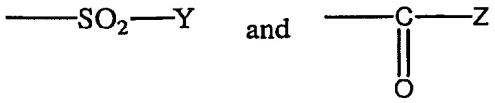
wherein $R_1$ and $R_5$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons,




wherein Y is selected from the group consisting of: alkyl having 1 to 8 carbons, alkenyl having 2 to 8 carbons, alkoxy having 1 to 6 carbons, substituted amino, substituted cycloalkyl, substituted phenyl and substituted aralkyl

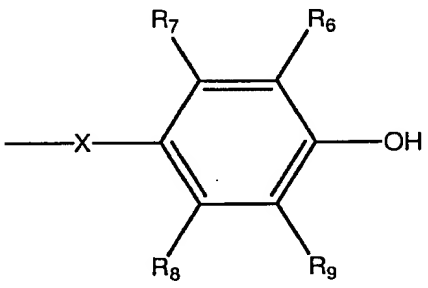
Z is selected from the group consisting of: alkyl having 1 to 8 carbons, alkenyl having 2 to 8 carbons, alkoxy having 1 to 6 carbons, hydroxyl, substituted amino, substituted cycloalkyl, substituted phenyl and substituted aralkyl;

$R_2$ and $R_4$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, and hydroxyl, or, when $R_1$, $R_3$ or $R_5$ is alkoxy having 1 to 4 carbons or hydroxyl, $R_2$ and $R_4$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,

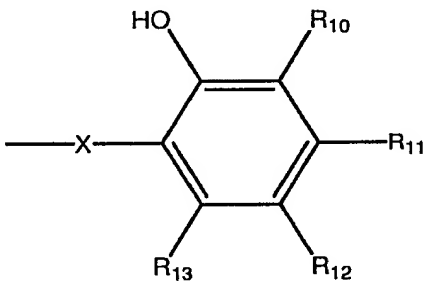



wherein Y and Z are as defined above;

$R_3$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, Formula (II), Formula (III), $-SO_2-Y$, and $-C(=O)-Z$, wherein Y and Z are as defined above,

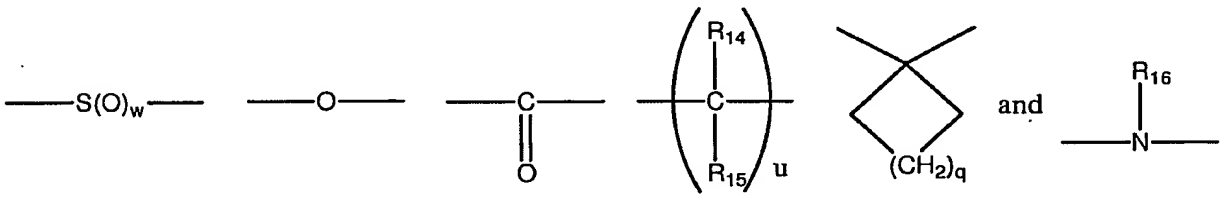



(II)




(III)

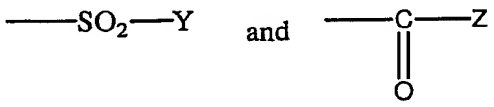
X is selected from the group consisting of: :




wherein w is 0, 1 or 2; u is 0 or 1; q is 0 to 4; $R_{14}$ and $R_{15}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, optionally substituted phenyl and optionally

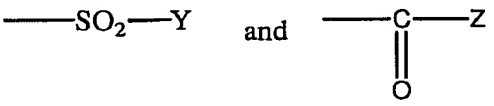
substituted aralkyl; $R_{16}$ is selected from the group consisting of: hydrogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, substituted phenyl and substituted aralkyl;

$R_6$, $R_9$ and $R_{10}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,

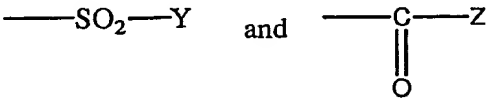


wherein Y and Z are as defined above;

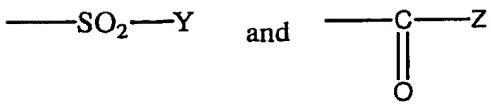
$R_7$, $R_8$, $R_{11}$, and $R_{13}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons and hydroxyl, but when $R_{12}$ is alkoxy having 1 to 4 carbons or hydroxyl, $R_{11}$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,



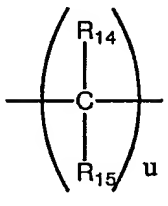
wherein Y and Z are as defined above; $R_{12}$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,



wherein Y and Z are as defined above, provided that when $R_3$ is of Formula (II), one of $R_1$, $R_5$, $R_6$, and $R_9$ is selected from the group consisting of:

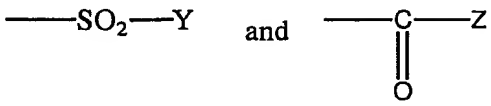


wherein Y and Z are as defined above, in which, when X is

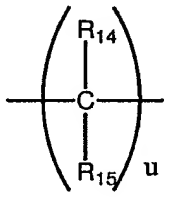


at least one of $R_1$, $R_2$, $R_4$, $R_5$, $R_6$, $R_7$, $R_8$, and $R_9$ is $-SO_2-Y$, and

when $R_3$ is of Formula (III), at least one of $R_1$, $R_5$, and $R_{10}$ is selected from the group consisting of:



in which, when X is



at least one of $R_1$, $R_2$, $R_4$, $R_5$, $R_{10}$, $R_{11}$, $R_{12}$, and $R_{13}$ is $-SO_2-Y$,

wherein Y and Z are as defined above, and

when $R_3$ is selected from a group other than the group consisting of: Formula (II) and (III), either of $R_1$ or $R_5$ is $-SO_2-Y$, wherein Y is as defined above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins,

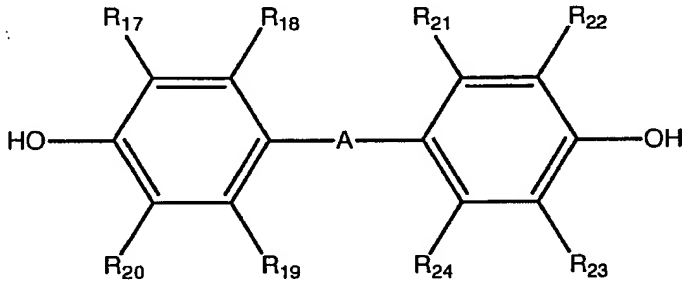
adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, and

the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha - bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl

sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole;

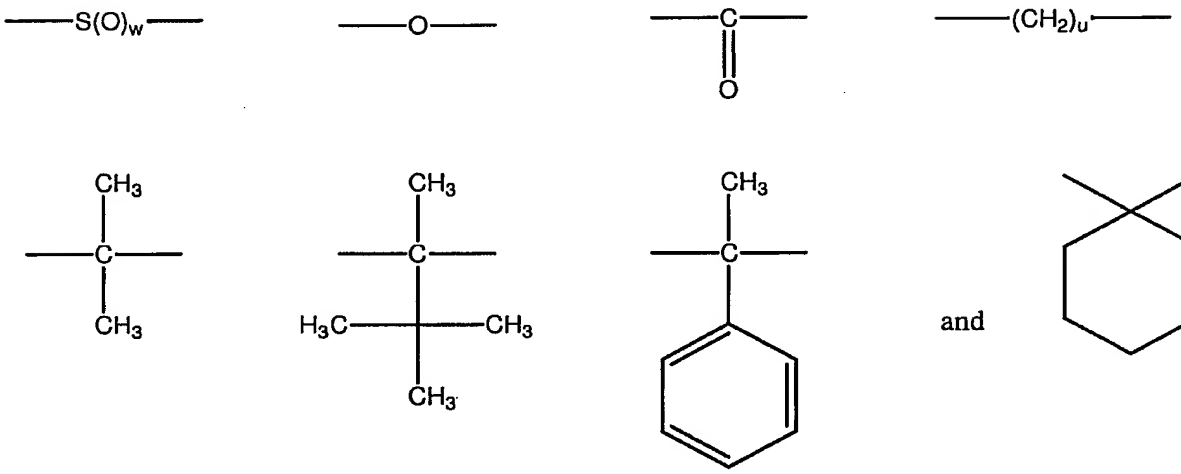
heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

36. (New) A molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds prepared by the method of reacting a phenol derivative represented by Formula (IV):




(IV)

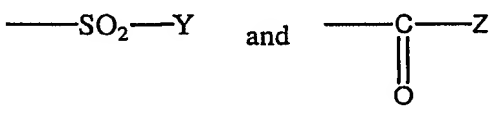
wherein A is selected from the group consisting of:




wherein w is 0, 1 or 2 and u is 0 or 1;

$R_{18}$, $R_{19}$, $R_{21}$ and $R_{24}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons and alkenyl having 2 to 4 carbons;

$R_{17}$ is selected from the group consisting of:




wherein Y and Z are selected from the group consisting of:

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

benzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α -methylbenzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

$R_{20}$, $R_{22}$, and $R_{23}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, $-SO_2-Y$, and $-C(=O)-Z$, wherein Y and Z are as defined above, and when A is

$$-(CH_2)_u-,$$

at least one of $R_{17}$, $R_{20}$, $R_{22}$ and $R_{23}$ is $-SO_2-Y$, wherein Y is as defined above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates,

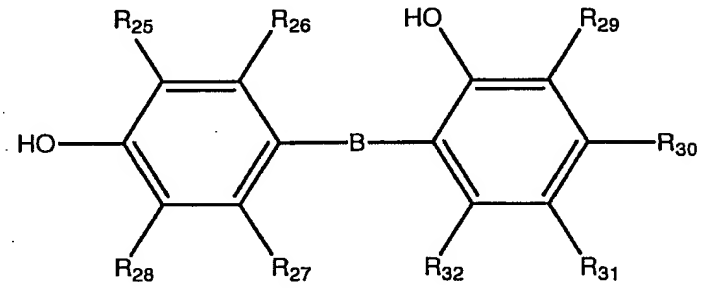
solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, and

the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha -bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone;

thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline,

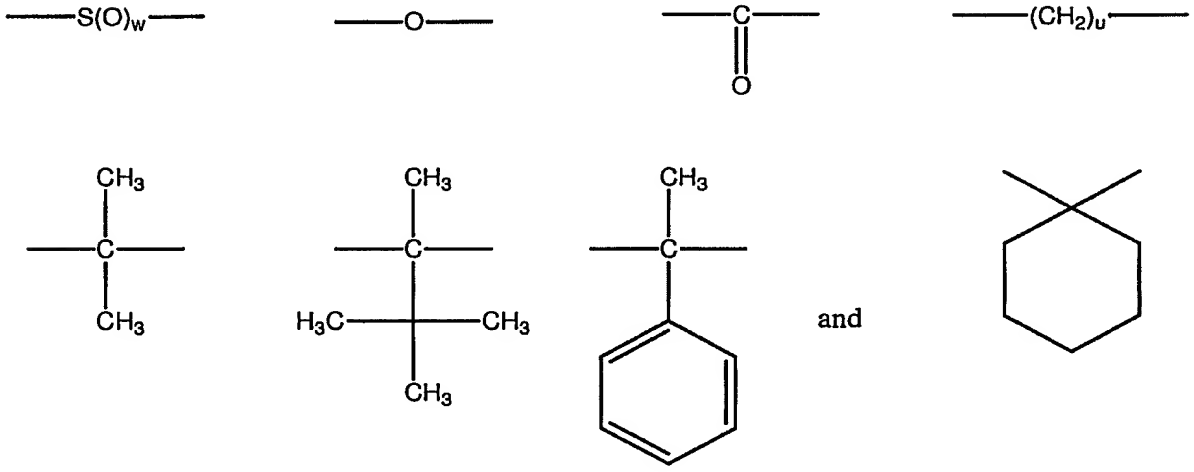
isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

37. (New) A molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds prepared by the method of reacting a phenol derivative represented by Formula (V):




(V)

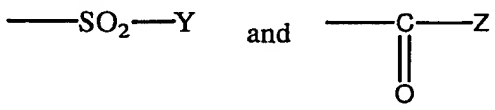
wherein B is selected from the group consisting of:




wherein w is 0, 1 or 2 and u is 0 or 1;

$R_{26}$, $R_{27}$, $R_{30}$ and $R_{32}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons and alkenyl having 2 to 4 carbons;

$R_{25}$, $R_{28}$, $R_{29}$ and $R_{31}$ are same or different groups selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons,




wherein Y and Z are selected from the group consisting of: :

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

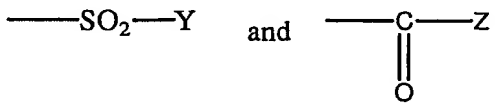
benzyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α -methylbenzyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

at least one of $R_{25}$, $R_{28}$ and $R_{29}$ is selected from the group consisting of:



wherein Y and Z are as defined above, and

when B is

$$-(CH_2)_u-,$$

at least one of $R_{25}$, $R_{28}$, $R_{29}$ and $R_{31}$ is $-SO_2-Y$ wherein Y is defined as above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling

agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, and

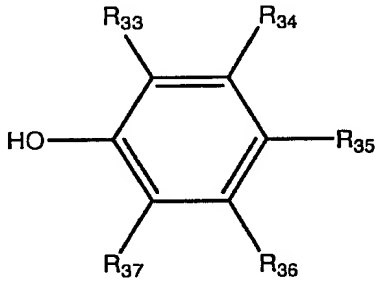
the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha - bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide,

dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-

1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol,

linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

38. (New) A molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds prepared by the method of reacting a phenol derivative represented by Formula (VI):




(VI)

wherein $R_{33}$ is $-SO_2-Y$,

wherein Y is selected from the group consisting of:

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

benzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α-methylbenzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

$R_{34}$, $R_{35}$, $R_{36}$, and $R_{37}$ are the same or different selected from the group consisting of: hydrogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, halogen and $-SO_2-Y$, wherein Y is as defined above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, and

the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha -bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene

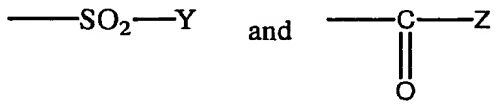
sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-

monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran,

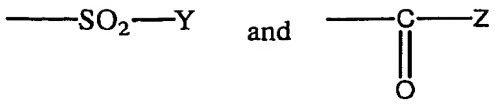
xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

39. (New) The molecular compound according to any one of claims 35 to 38, wherein the molecular compound is a crystalline clathrate compound.

40. (New) The molecular compound according to claim 35, wherein $R_1$ and $R_5$ are the same or different and are selected from the group consisting of: halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons,

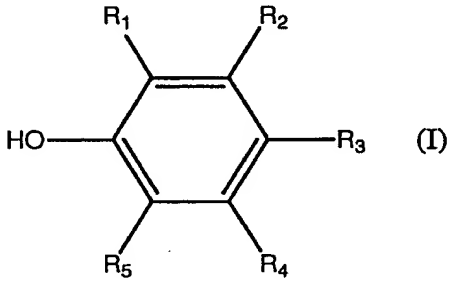



41. (New) The molecular compound according to claim 35, wherein $R_1$ and $R_5$ are the same or different and are selected from

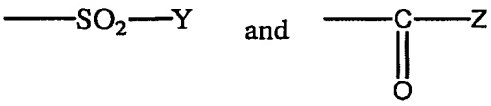


42. (New) A method for producing a molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds, comprising:

reacting a phenol derivative represented by Formula (I):



wherein $R_1$ and $R_5$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons,

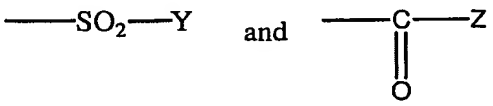


wherein Y is selected from the group consisting of: alkyl having 1 to 8 carbons, alkenyl having 2 to 8 carbons, alkoxy having 1 to 6 carbons, substituted amino, substituted cycloalkyl, substituted phenyl and substituted aralkyl,

Z is selected from the group consisting of: alkyl having 1 to 8 carbons, alkenyl having 2 to 8 carbons, alkoxy having 1 to 6 carbons, hydroxyl, substituted amino, substituted cycloalkyl, substituted phenyl and substituted aralkyl;

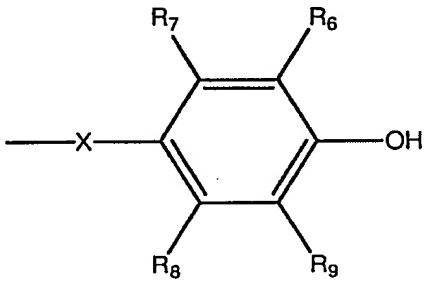
$R_2$ and $R_4$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, and hydroxyl, or, when $R_1$, $R_3$ or $R_5$ is alkoxy having 1 to 4 carbons or hydroxyl, $R_2$

and $R_4$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,

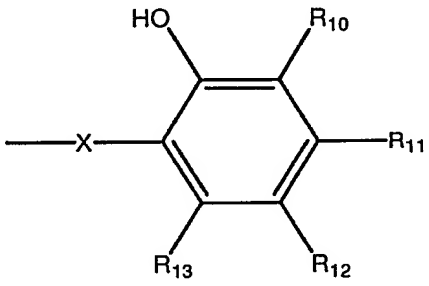


wherein Y and Z are as defined above;

$R_3$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, Formula (II), Formula (III), $-SO_2-Y$, and $-C(=O)-Z$, wherein Y and Z are as defined above,

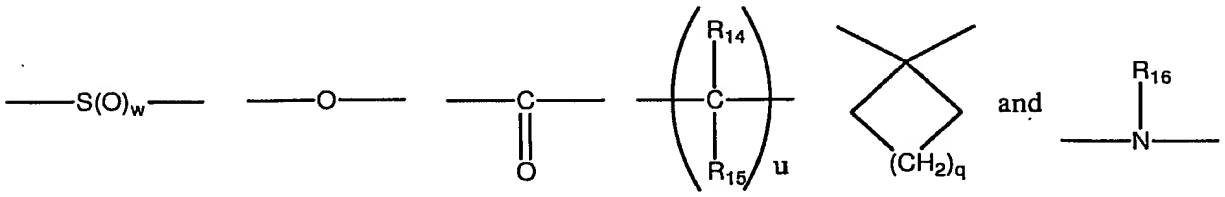


(II)



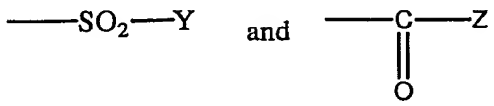
(III)

X is selected from the group consisting of:



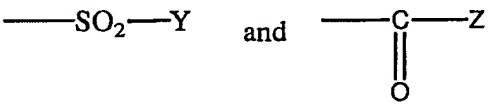
wherein w is 0, 1 or 2; u is 0 or 1; q is 0 to 4; $R_{14}$ and $R_{15}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, optionally substituted phenyl and optionally substituted aralkyl; $R_{16}$ is selected from the group consisting of: hydrogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, substituted phenyl and substituted aralkyl;

$R_6$, $R_9$ and $R_{10}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,

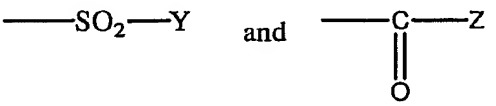


wherein Y and Z are as defined above;

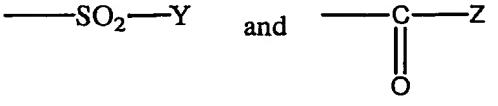
$R_7$, $R_8$, $R_{11}$, and $R_{13}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons and hydroxyl, but when $R_{12}$ is alkoxy having 1 to 4 carbons or hydroxyl, $R_{11}$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,



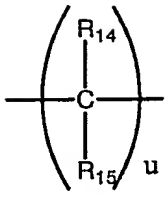
wherein Y and Z are as defined above; $R_{12}$ is selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl,



wherein Y and Z are as defined above, provided that when $R_3$ is of Formula (II), one of $R_1$, $R_5$, $R_6$ and $R_9$ is selected from the group consisting of:

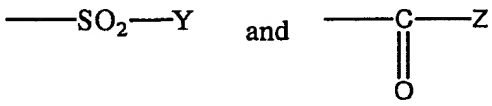


wherein Y and Z are as defined above, in which, when X is

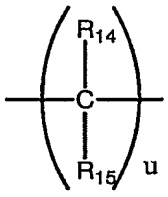


at least one of $R_1$, $R_2$, $R_4$, $R_5$, $R_6$, $R_7$, $R_8$, and $R_9$ is $-SO_2-Y$, and

when $R_3$ is of Formula (III), at least one of $R_1$, $R_5$, and $R_{10}$ is selected from the group consisting of:



in which, when X is



at least one of $R_1$, $R_2$, $R_4$, $R_5$, $R_{10}$, $R_{11}$, $R_{12}$, and $R_{13}$ is $-SO_2-Y$,

wherein Y and Z are as defined above, and

when $R_3$ is selected from a group other than the group consisting of: Formula (II) and (III), either of $R_1$ or $R_5$ is $-SO_2-Y$, wherein Y is as defined above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, wherein

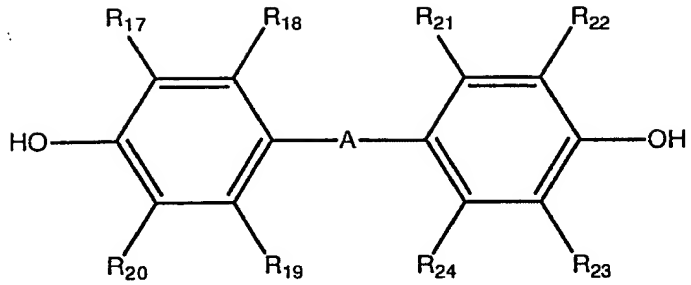
the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha -bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane

compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine,

uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

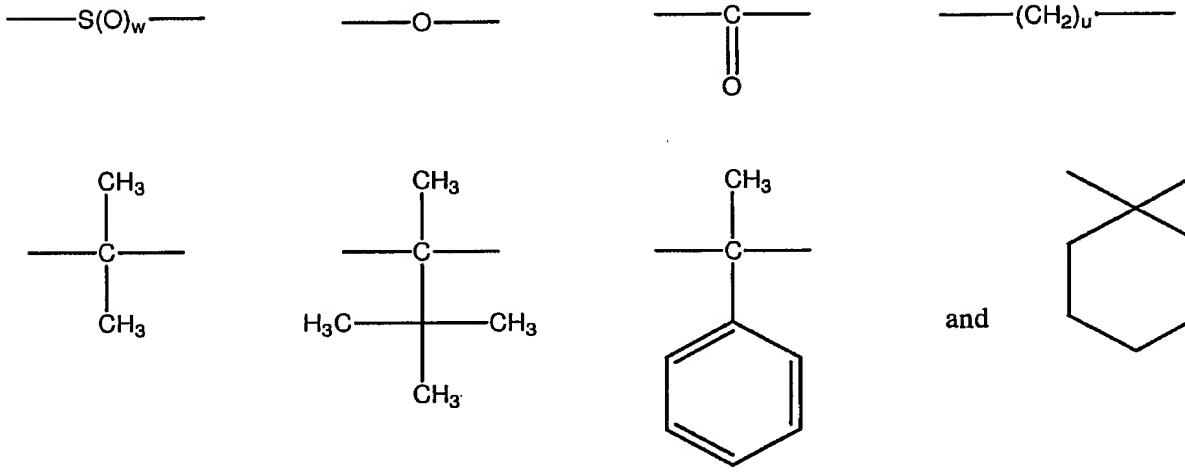
43. (New) A method for producing a molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds, comprising:

reacting a phenol derivative represented by Formula (IV):




(IV)

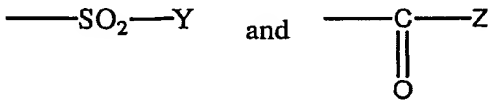
wherein A is selected from the group consisting of:




wherein w is 0, 1 or 2 and u is 0 or 1;

$R_{18}$, $R_{19}$, $R_{21}$ and $R_{24}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons and alkenyl having 2 to 4 carbons;

$R_{17}$ is selected from the group consisting of:




wherein Y and Z are selected from the group consisting of:

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

benzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α -methylbenzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

$R_{20}$, $R_{22}$, and $R_{23}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, $-SO_2-Y$, and $-C(=O)-Z$, wherein Y and Z are as defined above, and when A is

$$-(CH_2)_u-,$$

at least one of $R_{17}$, $R_{20}$, $R_{22}$ and $R_{23}$ is $-SO_2-Y$, wherein Y is as defined above ,and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, wherein

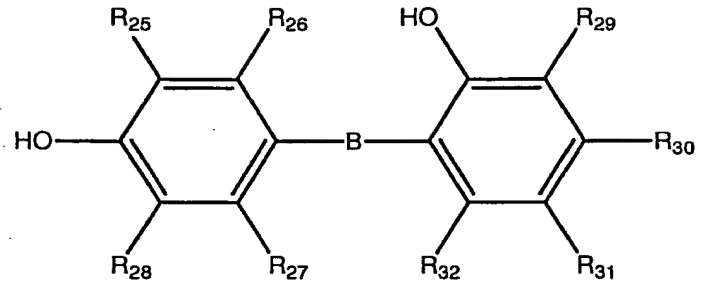
the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha - bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane

compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine,

uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid, and nicotinamide.

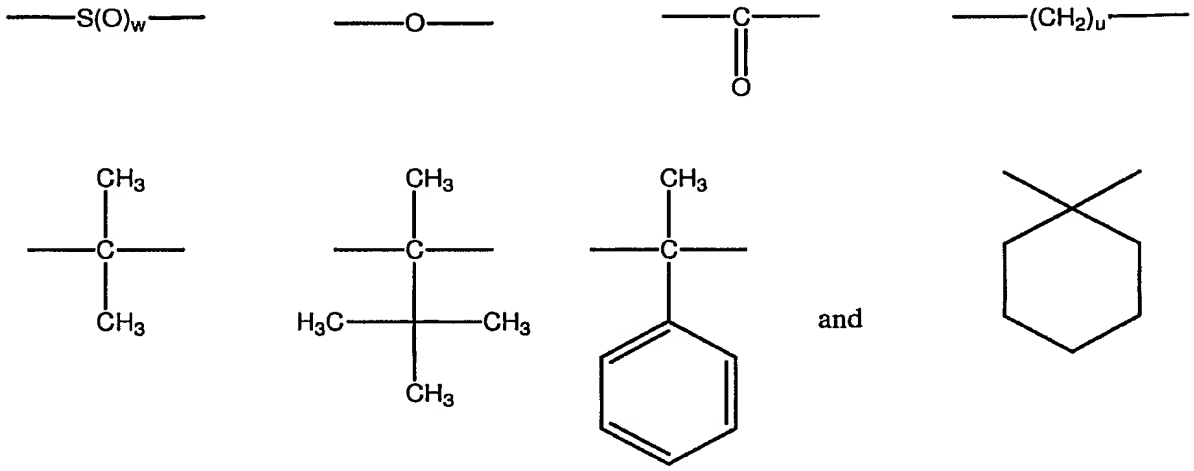
44. (New) A method for producing a molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds, comprising:

reacting a phenol derivative represented by Formula (V):




(V)

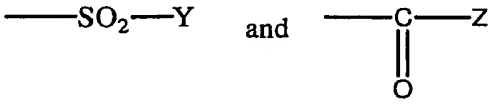
wherein B is selected from the group consisting of:




wherein w is 0, 1 or 2 and u is 0 or 1;

$R_{26}$, $R_{27}$, $R_{30}$ and $R_{32}$ are same or different selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons and alkenyl having 2 to 4 carbons;

$R_{25}$, $R_{28}$, $R_{29}$ and $R_{31}$ are same or different groups selected from the group consisting of: hydrogen, halogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons,




wherein Y and Z are selected from the group consisting of:

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

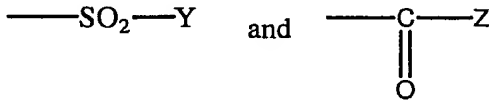
benzyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α -methylbenzyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl which may have alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

at least one of $R_{25}$, $R_{28}$ and $R_{29}$ is selected from the group consisting of:



wherein Y and Z are as defined above, and

when B is

$$-(CH_2)_u-,$$

at least one of $R_{25}$, $R_{28}$, $R_{29}$ and $R_{31}$ is $-SO_2-Y$ wherein Y is defined as above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions

sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, wherein

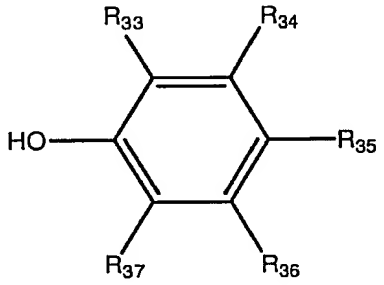
the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha - bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether; morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-

cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine,

pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid and nicotinamide.

45. (New) A method for producing a molecular compound selected from the group consisting of hydrates, solvates, adducts, and clathrate compounds, comprising:

reacting a phenol derivative represented by Formula (VI):




(VI)

wherein $R_{33}$ is $-SO_2-Y$,

wherein Y is selected from the group consisting of:

alkyl having 1 to 6 carbons,

alkenyl having 2 to 6 carbons,

cyclohexyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

cyclopentyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or halogen,

benzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

phenethyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen,

α-methylbenzyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

naphthyl optionally substituted with alkyl having 1 to 4 carbons or alkenyl having 2 to 4 carbons or alkoxy having 1 to 4 carbons or hydroxyl or halogen, and

$R_{34}$, $R_{35}$, $R_{36}$, and $R_{37}$ are the same or different selected from the group consisting of: hydrogen, alkyl having 1 to 4 carbons, alkenyl having 2 to 4 carbons, alkoxy having 1 to 4 carbons, hydroxyl, halogen and $-SO_2-Y$, wherein Y is as defined above, and

an organic compound selected from the group consisting of: antibacterial agents, antifungal agents, insecticides, noxious insect repellants, perfumes, deodorants, antifouling agents, curing agents for coating materials, accelerators for coating materials, resins, adhesives, natural essential oils, antioxidants and vulcanization accelerators under conditions sufficient to from the molecular compound selected from the group consisting of: hydrates, solvates, adducts, and clathrate compounds having the phenol derivative as a constituent, the constituent being a host, wherein

the organic compound is selected from the group consisting of: alcohols: isopropanol, n-butanol, n-octanol, 2-ethylhexanol, allyl alcohol, propargyl alcohol, 1,2-butanediol, 1,3-butanediol, 1,4-butanediol, cyclohexanediol, 2-bromo-2-nitropropane-1,3-diol, 2,2-dibromo-2-nitro ethanol and 4-chlorophenyl-3-iodopropargyl formal; aldehydes: formaldehyde, acetaldehyde, n-butylaldehyde, propionaldehyde, benzaldehyde, phthalaldehyde, alpha - bromocynnamaldehyde and phenylacetaldehyde; ketones: cyclohexanone, acetyl acetone and 2-bromo-4'-hydroxyacetophenone; nitriles: acrylonitrile, n-butylonitrile, malononitrile, phenylacetonitrile, benzonitrile, cyanopyridine, 2,2-dibromomethylglutaronitrile, 2,3,5,6-tetrachloroisophthalonitrile, 5-chloro-2,4,6-trifluoroisophthalonitrile and 1,2-dibromo-2,4-dicyanobutane; ethers: dioxolane and trioxane; esters: bis-1,4-bromoacetoxy-2-butene; sulfone amides: benzene sulfone amide; amides: dicyane diamide, dibromonitrile propionamide, 2,2-dibromo-3-nitrilo propionamide and N,N-diethyl-m-toluamide; lactams: epsilon -caprolactam; lactones: epsilon -caprolactone; oxyranes: arylglycidyl ether;

morphorines; phenols: phenol, cresol, resorcinol and p-chloro-m-cresol; carboxylic acids and thiocarboxylic acids: formic acid, acetic acid, propionic acid, oxalic acid, citric acid, adipic acid, tartaric acid, benzoic acid, phthalic acid and salicylic acid; sulfaminic acids; thiocarbamic acids; thiosemicarbazides; ureas and thioureas: urea, phenylurea, diphenylurea, thiourea, phenylthiourea, diphenylthiourea and N,N-dimethyldichlorophenylurea; isothioureas; sulfonylureas; thiols: thiophenol, allyl mercaptan, n-butyl mercaptan and benzyl mercaptan; sulfides: benzyl sulfide and butyl methyl sulfide; disulfides: dibutyl disulfide, dibenzyl disulfide and tetramethylthiuram disulfide; sulfoxides: dimethyl sulfoxide, dibutyl sulfoxide and dibenzyl sulfoxide; sulfones: dimethyl sulfone, phenyl sulfone, phenyl-(2-cyano-2-chlorovinyl) sulfone, hexabromodimethyl sulfone and diiodomethylparatolyl sulfone; thiocyanic acids and isothiocyanic acids: methyl thiocyanate and methyl isothiocyanate; amino acids: glycine, alanine, leucine, lysine, methionine and glutamine; amides and urethane compounds; acid anhydrides; alkynes; isocyanates: butyl isocyanate, cyclohexyl isocyanate and phenyl isocyanate; thiocyanates and isothiocyanates: methylene bisthiocyanate and methylene bisisothiocyanate; nitro compounds: tris(hydroxymethyl)nitromethane; non-cyclic aliphatic amines: ammonia, methylamine, ethylamine, propylamine, butylamine, pentylamine, hexylamine, allylamine, hydroxylamine, ethanolamine, benzylamine, ethylenediamine, 1,2-propanediamine, 1,3-propanediamine, 1,4-butanediamine, 1,5-pentanediamine, 1,6-hexanediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine, dipropylenediamine, N-N-dimethylethylenediamine, N,N'-dimethylethylenediamine, N,N-dimethyl-1,3-propanediamine, N-ethyl-1,3-propanediamine, trimethylhexamethylenediamine, alkyl-t-monoamine, menthanediamine, isophoronediamine, guanidine and N-(2-hydroxypropyl)amino methanol; cyclic aliphatic amines: cyclohexylamine, cyclohexanediamine, bis(4-aminocyclohexyl)methane, pyrrolidines, azetidines, piperidines, piperadines: piperadine, N-aminoethylpiperadine and N,N'-dimethylpiperadine, and

pyrrolines; aromatic amines: aniline, N-methylaniline, N,N-dimethylaniline, o-phenylenediamine, m-phenylenediamine, p-phenylenediamine, diaminodiphenylmethane, diaminodiphenyl sulfone and m-xylenediamine; modified polyamines: epoxy compound-added polyamines, Micheul-added polyamines, Mannich-added polyamines, thiourea-added polyamines and ketone-blocked polyamines; imidazoles: imidazole, 2-methylimidazole, 2-ethylimidazole, 2-isopropylimidazole, 2-n-propylimidazole, 2-ethyl-4-methylimidazole, 1-benzyl-2-methylimidazole, 2-undecyl-1H-imidazole, 2-heptadecyl-1H-imidazole, 2-phenyl-1H-imidazole, 4-methyl-2-phenyl-1H-imidazole and 1-benzyl-2-methylimidazole; heterocyclic compounds containing nitrogen: pyrrole, pyridine, picoline, pyrazine, pyridazine, pyrimidine, pyrazole, triazole, benzotriazole, triazine, tetrazole, purine, indole, quinoline, isoquinoline, carbazole, imidazoline, pyrroline, oxazole, piperine, pyrimidine, piridazine, benzimidazole, indazole, quinazoline, quinoxaline, phthalimide, adenine, cytosine, guanine, uracil, 2-methoxycarbonylbenzimidazole, 2,3,5,6-tetrachloro-4-methanesulfonylpyridine, 2,2-dithio-bis-(pyridine-1-oxide), N-methylpyrrolidone, 2-benzimidazole, methyl carbamate, sodium 2-pyridinethiol-1-oxide, hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, hexahydro-1,3,5-triethyl-s-triazine, 2-methylthio-4-t-butylamino-6-cyclopropylamino-s-triazine, N-(fluorodichloromethylthio)phthalimide, 1-bromo-3-chloro-5,5-dimethylhydantoin, 2-methoxycarbonylbenzimidazole and 2,4,6-trichlorophenylmaleimide; heterocyclic compounds containing oxygen: furan, furfuryl alcohol, tetrahydrofurfuryl alcohol, furfurylamine, pyrane, coumarin, benzofuran, xanthene and benzodioxane; heterocyclic compounds containing nitrogen and oxygen: oxazole, isooxazole, benzoxazole, benzoisooxazole, 5-methyloxazolidine, 4-(2-nitrobutyl)morpholine and 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine; heterocyclic compounds containing sulfur: thiophene, 3,3,4,4-tetrahydrothiophene-1,1-dioxide, 4,5-dichloro-1,2-dithiolan-3-one, 5-chrolo-4-phenyl-1,2-dithiolan-3-one and 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide; heterocyclic

compounds containing nitrogen and sulfur: thiazole, benzothiazole, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one, 4,5-dichloro-3-n-octylisothiazolin-3-one, 2-octyl-4-isothiazolin-3-one, 1,2-benzisothiazolin-3-one, 2-thiocyanomethylbenzothiazole, 2-(4-thiazolyl)benzimidazole and 2-thiocyanomethylbenzothiazole; steroids: cholesterol; alkaloids: brucine, quinine and theophylline; natural essential oils: cineol, hinokitiol, menthol, terpineol, borneol, nopol, citral, citronellol, citronellal, geraniol, menthone, eugenol, linalool and dimethyloctanol; synthetic perfumes: fragrant olive, jasmine and lemon; vitamins and related compounds: ascorbic acid, nicotinic acid, and nicotinamide.